

# Study on Graphene's photovoltaic potential and its comparison with other conventional materials

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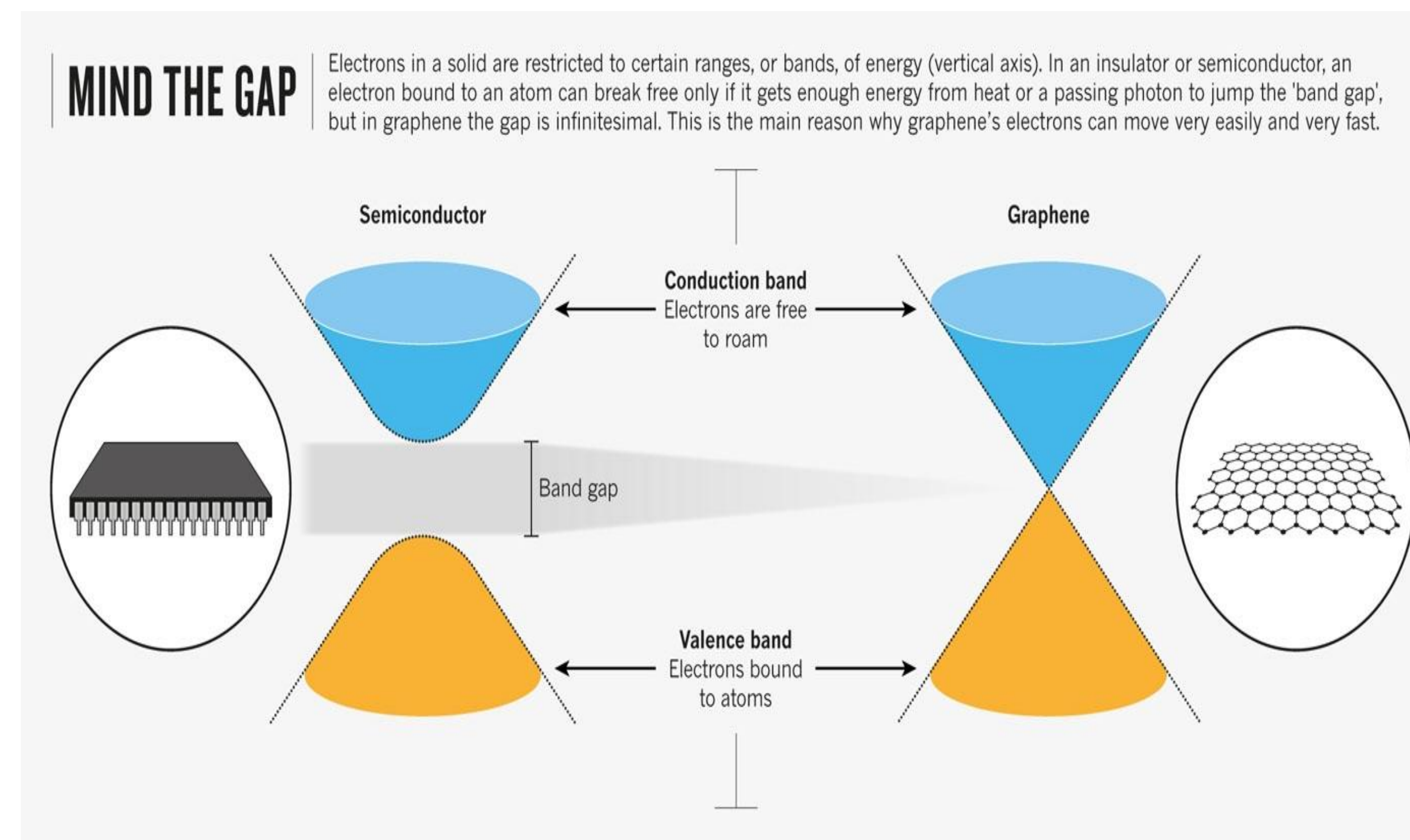
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## INTRODUCTION

Graphene has unique optical properties that make it different from other materials that are used to turn light to electricity. Graphene when absorbs a photon, generates multiple electrons while materials like silicon and gallium arsenide, generate a single electron for each photon absorbed.

It has vast applications in fields of biological engineering, optical electronics, ultra filtration, photovoltaic, nanotechnology etc.

## GRAPHENE'S POTENTIAL

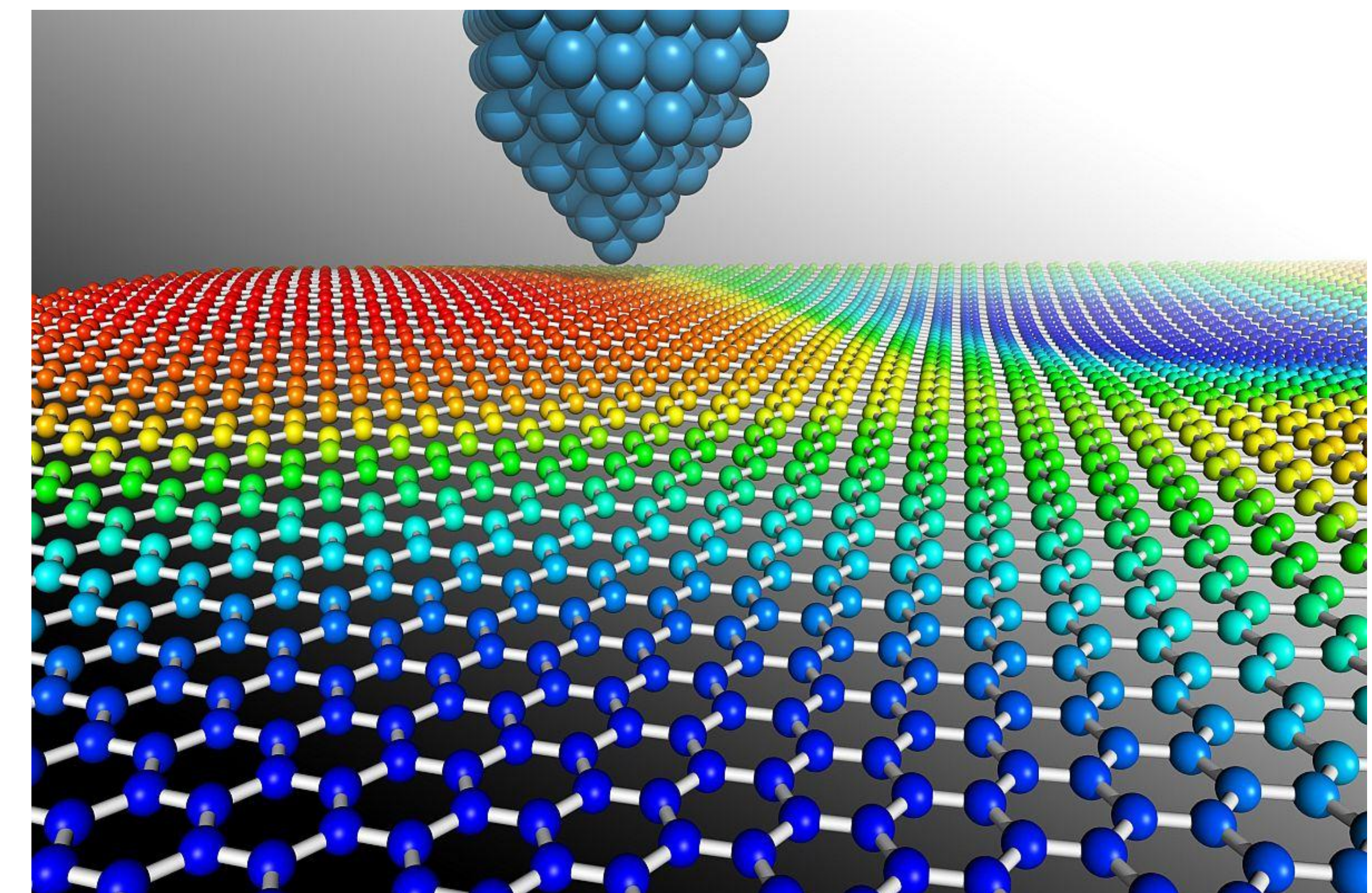


Graphene has remarkable strength and electrical properties and is getting to a point where it can compete with today's technologies.

Germanium can detect only photons that have enough energy to push electrons across an energy barrier, enabling electrical charge to move freely though the semiconductor. But graphene can detect any wavelength because it has no band gap. The latest devices using graphene generated 50–100 times more current than the earlier detectors from the same amount of light because of fast moving electrons .

## GRAPHENE FACTS

- Graphene is 200 times stronger than steel.
- It is the most conductive materials due to fast moving electrons
- It is the world's first 2D material
- Graphene layer is 1 million times thinner than human hair.



## CONCLUSION

Graphene has enormous potential to create incredible future technologies and vastly enhance existing products.

